

AMERICAN VETERINARY REVIEW,

AUGUST, 1887.

EDITORIAL.

DOURINE IN THE WEST.—Our prophecy of years ago is slowly coming to a reality—little by little European contagious diseases obtain a foothold on this continent—no measures taken to prevent their importation—will rinderpest be allowed to come?—dourine creates quite a panic—the action against it in Illinois—the opinions of veterinarians—our suggestions. **VACCINATION IN ANTHRAX**—we have always advocated it—was it out of patriotic enthusiasm?—no—the extracts from the *Annales de l'Institut Pasteur*, and the report of Prof. Robertson, substantiate our opinions. **A NEW SUTURE NEEDLE**—another good invention by Dr. Peabody—the new needle is a good instrument. **VETERINARY DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA**—the grant of \$50,000 given by the Legislature vetoed by the Governor—our anticipations and hopes disappointed—better luck next time—all it needs is patience, perseverance and honesty of purpose. **UNITED STATES VETERINARY MEDICAL ASSOCIATION AND REVIEW PRIZE**—conclusion of the paper on glanders—its issue as a whole and its distribution amongst the members of the Association—now for the Committee on Prizes to be prepared for the next meeting. **REPORT OF THE ENGLISH HYDROPHOBIA COMMITTEE**—sweeping approval of the subject—more of it in another issue.

MALADIE DU COIT IN THE WEST.—We little thought how nearly we approached prophecy when, years ago, we expressed our apprehension that all the communicable and contagious diseases belonging to the domain of veterinary sanitary medicine, long prevalent on the other side of the Atlantic, but strange heretofore to American experience, were likely in due time to find their way to our shores, simply in consequence of the lack of suitable measures of obstruction and exclusion on the part of our authorities and people. It truly seemed that these plagues were to be allowed to find their way to the United States, not only without molestation or hindrance, but even without recognition, until they should become

so diffused and naturalized throughout our widespread territory as to involve an expense and difficulty in their suppression altogether too formidable to contemplate, if, indeed, it were possible by any means or at any cost. And who will undertake to estimate the amount of public expenditure and the extent of the private loss attendant upon any concerted and efficient measures of suppression, with such an evil for the object of encounter?

Almost all the diseases of a contagious nature have now been brought to our land from Europe, mostly without attracting any proper degree of attention, and, until lately, without being met with any precautions against their diffusion through the whole country; and the question is often discussed in our veterinary meetings, whether rinderpest itself may not some day be announced as another distinguished visiting stranger, coming to renew its old associations with its Old Country companions—pleuropneumonia, foot-and-mouth disease, tuberculosis, and especially our latest importation, *dourine*, all of which may now be accounted American diseases, and none the less because they are merely naturalized foreigners and not native-born aborigines.

Veterinarians of European education, who have been practicing in the United States, have more than once suggested the propriety of watching against the importation of this most serious affection of solipeds, and practitioners of this class have, therefore, been but little surprised at the news of the outbreak in Illinois.

The people, however, are alarmed, and as Illinois has already suffered severely by the outbreak of contagious pleuro-pneumonia, and they are not anxious to suffer further loss of the same character, they are quite prepared to meet this new invasion with all the energy, and to apply all the means towards suppression, which may be demanded by the stress of the emergency.

A full discussion of the subject was had at a recent meeting in DeWitt County, and resulted in the adoption of the following resolutions:

To the People of DeWitt County:

WHEREAS, A disease exists among horses in this county, known as "Maladie du coit," or epizootic chancre, and, whereas, all good citizens should esteem it a privilege and duty to aid in every possible way in its suppression, and

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WHEREAS, A mass meeting of the citizens of the county has been called for the purpose of considering the condition that exists, and determining upon the best methods to be adopted for the speedy suppression of the disease, and

WHEREAS, The undersigned have been appointed to present a plan of action for the consideration of the citizens assembled in mass meeting, the following statements and recommendations are made:

1st. The existence of the disease can be traced to the year 1885. Its origin has not been satisfactorily determined.

2d. There are from twelve to twenty stallions in the county afflicted with the disease, and a number of other stallions have been exposed, and are liable to communicate it to mares.

3d. There are from forty to fifty mares in the county afflicted with the disease, and from twenty-five to thirty of these mares have died from the effects of the same. A large number of other mares have been exposed to the disease, which your committee cannot say are actually diseased.

4th. The committee recommends that the diseased horses, and those that have been exposed, should be quarantined by the State Board of Live Stock Commissioners, and that the owners of such stallions be not allowed to breed or sell said stallions; and in case the veterinary surgeons report said afflicted stallion or stallions as incurable, that the owners of said stallions castrate the same at once.

5th. The committee recommends that the mares that have been affected or exposed should likewise be quarantined, and if the report from the committee of experts appointed by your body say that the disease is in them incurable, in such case that all such mares as have been actually diseased shall be branded with the letters V. D. on the left hip, and that they never be bred again, and that W. H. Wheeler, of Clinton, be appointed with authority to brand such mares.

6th. That mares exposed in 1886 or 1887, even when the disease has not appeared, should also be quarantined, and that said mares shall not be bred during the years 1888 or 1889, until a certificate of health from some competent veterinarian has been given.

7th. That committeemen be appointed in each township whose duty it shall be to prepare four lists, viz.: Of diseased stallions, of exposed stallions, of diseased mares, of exposed mares, in their respective townships, and report the same to John W. Bowren, Secretary.

8th. That a committeeman be appointed from each township, whose duty it shall be to see that the restrictions placed upon the sale, transfer and breeding of exposed and diseased animals shall be strictly complied with, and that they shall prosecute all cases of violation of said regulations.

A number of veterinarians were present at this meeting, amongst whom were Professor Law, State Veterinarian Dr. Casewell and his assistant, Dr. Baker, and others.

The general measures recommended by these gentlemen, besides a strict quarantine and other sanitary precautions, were the

castration of the stallions and spaying of the mares, to insure against the spread of the disease by their use for breeding purposes; and a very radical, but, we consider, most excellent decision of the meeting, was to *kill every infected animal*. We are inclined to consider these the most desirable of all the measures applicable to the emergency, with the indispensable addendum of a provision strictly prohibiting the importation of any stallions or mares without a perfect and clean bill of health, certified by the proper officials of the county, town or department from which the animals are brought, and which shall be supplemented by a rigid veterinary inspection at the place of landing, and, if necessary, a subsequent quarantine. Such a process of prevention as this will overbalance, beyond computation, the trouble and cost of measures which may subsequently become necessary through improvidence and stupidity in the beginning.

VACCINATION IN ANTHRAX.—A reference to the files of the **REVIEW** for several years past recalls to our recollection a number of articles in which we have stated our views on the subject of vaccination in various diseases, and we are quite satisfied to reaffirm our position, and to feel assured that our advocacy has been fully justified by the benefits which have followed the practice and rewarded our suggestions. This advocacy of the theories and experiences of Pasteurism has been in some instances reproachfully charged against us as an error resulting from patriotic enthusiasm.

The reproach may be a just one, but, notwithstanding this, no one can question the integrity of our views and the conscientiousness of our advocacy, or truthfully deny our willingness to confess our demonstrated errors, when discovered.

We refer, on this point, to our course in respect to the matter of hog cholera, in connection with the Pasteur prophylaxy. We formed the opinion that inoculation with the Pasteur vaccine was the best means of protecting the swine-owners of the West from disaster and loss, and we so affirmed. We discovered our error, and acknowledged it; and to-day we declare that we now oppose as strenuously as we then defended, the use of the means in question.

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it ought to be anthrax, in its various forms, and Pasteur's vaccine for anthrax fever has sufficiently achieved its proofs.

A glance at the tables to be found in the "Annales de l'Institut Pasteur," will prove the value of this mode of treatment, and the reports of the experiments made in England by Professor Robertson, which were laid before the Royal Agricultural Society, also show that in that country, where anthrax in its various forms is sometimes so extensively prevalent, we cannot any longer afford to ignore the advantages of vaccination. A few of our friends here have, at our suggestion, already tried some of the vaccine of Professor Cornevin, and also that of Professor Chauveau, with which we had furnished them; and the result, to which we will refer in another issue of the REVIEW, has been of a most satisfactory character. It will give us pleasure to furnish any of our friends who wish to make trial of it a supply of the vaccine for further experiment or use.

A NEW SUTURE NEEDLE.—Only those who have been taught by their experience of the annoyance, can testify to the vexation they have sometimes encountered in the want of a proper needle or holder, by which they could make a firm and solid suture without painfully puncturing their own fingers and inflicting a wound which has continued sore and painful for days together.

Our friend, Dr. C. H. Peabody, whose inventive mind we all recognize, is one of those who has sometimes pierced himself with sorrow and forfeited his amiability under such circumstances, and so has felt himself, as it were, pricked on to contrive an instrument which can hurt only at the right end. He has, therefore, been at work on the invention of a peculiar needle, and has presented us with a number of samples for trial. Well, we like them. They have a peculiar bend, and a sort of double elbow towards the eye, which offers to the surgeon a very good hold and a strong support in pushing the needle through the tough tissue. We have tried them, and can recommend them. There is already something of the same description in use in human surgery, for sewing the skin of the cadaver in post mortems; but we think Dr. Peabody's is of easier use, and therefore answers the purpose better.

VETERINARY DEPARTMENT OF THE PENNSYLVANIA UNIVERSITY.—We congratulated the Veterinary Department of the University of Pennsylvania, in our June number, on the valuable grant of which the Legislature of the State had made it the recipient in voting a gift of \$50,000. We looked upon this action of the Legislature of the Keystone State as an example which would probably be followed by other States, and as an act by which the days of *private veterinary schools* would be shortened, and, on the whole, as a step which would help largely to bring the cause of veterinary education well forward towards its proper standard. It was, therefore, with much regret that we learned from the July number of the *Journal of Comparative Medicine* the news of the veto by the Governor of the State of this excellent bill, and the loss of the funds by those who would have so judiciously invested them. Great good might have been accomplished with such an amount, and many improvements added to the already well equipped Philadelphia veterinary school. But we hope that, after all, the veto will have no worse effect than the postponement of the benefit, and that it will yet be realized under a wiser Governor.

"Better luck next time" will bring it along. It seems to be a fact that any movement connected with the advancement of veterinary medicine in this country is bound to be slow. It is not to be without drawbacks and disappointments, but it is destined to succeed at last. Yet, although veterinary progress has always been slow, it has in the aggregate been enormous. But whether in Pennsylvania, New York, Massachusetts or Chicago, the work is destined to spread and to rise. The essentials of final success are patience, perseverance, and *honesty of purpose*.

UNITED STATES VETERINARY MEDICAL ASSOCIATION AND REVIEW PRIZE.—We conclude in the present number the paper which was submitted to us in competition for the prize offered by the United States Veterinary Medical Association and the editorial staff of the REVIEW. In accordance with a resolution passed at the last meeting of the Association, every member will receive a special copy of the completed paper. It is hoped that the Committee on Prizes will give it a suitable introduction to the

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meeting, and that the members will not prove themselves remiss in respect to their preparation for such action as shall be called for at their hands when the duty of voting upon the merits of the paper shall have been fulfilled. It is a production which has not been prepared without an amount of labor and thought which demand full recognition on the part of the Association.

It is to be regretted that the occasion has not devolved the duty of a larger exercise of critical acumen on the part of the judges, which would have been the case if a larger list of contestants had entered the field.

REPORT OF THE ENGLISH HYDROPHOBIA COMMITTEE.—The Hydrophobia Committee appointed by the English Government have unanimously agreed upon a favorable report upon all the questions relating to the subject of Pasteurization in hydrophobia. An abstract of the report of the committee will be found on another page, and we hope to be able to recur to the consideration of the subject in another number. We heartily congratulate the gentlemen of the committee on the wisdom of their conclusions, which they have reached through the most patient and thorough investigation, and for which they are entitled to the highest credit from both the community and the professions which they have so faithfully represented in a most important interest.

ORIGINAL ARTICLES.

MALADIE DU COIT—DOURINE.

By A. LIAUTARD.*

(Continued from page 156.)

In stallions the local symptoms are less apparent, and are often local only on the urethral mucous membrane, where the vesicles become ulcerated. They rarely appear on the glans penis or the external parts of the penis; and when they exist, they are accompanied by a limited loss of tissue, and cicatrize quite easily.

* Translated from A. Zundel.

In consequence of this fact, with the ordinarily concealed depth of the local lesions, the diagnosis is rendered more difficult in stallions than in mares, and it is frequently the case that the disease is first diagnosed by the nervous symptoms alone, although these are only of a secondary nature.

The disease is often discovered in pregnant mares before it has been diagnosticated in the stallion, which, when covering the mare while suffering with ulceration of the urethra, is sure to transmit the disease, even while presenting every visible appearance of being in perfect health himself.

It has been said that stallions which are entirely free from any local lesion may communicate the disease; but this is not the case. The impossibility of making a satisfactory examination of the urethra through its entire length renders it a very easy matter for deeply-seated lesions to escape detection, and a simple, local, and perhaps *latent* irritation must have been present, and might be easily overlooked.

The local lesion in the stallion ordinarily consists of an increase of coloration and a tumefaction of the mucous membrane, from the meatus urinarius throughout the entire length of the urethra, with a hypersecretion of mucous. An œdematous tumefaction, together with a contraction of the border of the prepuce, is sometimes observed; the animal has then a *lardaceous sheath*. In some cases the penis is strongly retracted, while in others it hangs out of the sheath and resembles a paraphymosis. The testicles are always flabby and pendant. The act of copulation is performed languidly and with an effort, the ejaculation seems difficult, and the stallion will sometimes mount the mare several times before accomplishing the act. The sperm is more fluid, and the spermatozœ are less active than in health, and these characters become more and more pronounced as the disease progresses. But sometimes, on the other hand, the genital organism and sexual desire seems to be increased, and, in sick stallions especially, there is frequently an involuntary seminal flow. Priapism is very common, the erection of the penis being of a painful character and without evidence of genital desire. In other words, the animal has become impotent. The horses frequently stretch

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themselves, as if to micturate, but the act of urination is accompanied with painful efforts, and results in the escape of only a small quantity of urine.

Meanwhile, the appetite is ordinarily good, the coat looks well, the animal has lost but little flesh, and the respiration and circulation are normal. The disease as thus described may be of long continuance, and present the local symptoms alone, its duration being greater in the mare than in the stallion. Yet the venereal desire, and especially the debilitating seminal discharges, constantly tend to hasten the process of the disease. Towards the end of a season, the morbid process seems to subside for a time, but only to return with greater activity at the next. Good care, co-operating with the vigor of the youthful constitution in a young animal, may succeed in limiting the disease to the manifestation of its local symptoms.

The first general symptom observed is the appearance of round tumors over the skin, analogous to those already described in mares. These tumors are flattened, well defined, never confluent, and involve only the dermis proper. They have been wrongly considered to be the first symptoms of the disease. There is often a slight enlargement of the lymphatic glands of the groin, with tumefaction of one or other of the hind legs, and orchitis also is often observed. As in mares, there is a nasal discharge and swelling of the maxillary glands, as in glanders.

Stallions often seem to suffer from a pruritic sensation over various regions of the body. It attacks them with such severity that the animal, in seeking relief, rubs himself so violently as to become covered with bloody ulcerations of an exceedingly ugly aspect, the skin itself being thickened, and tumefied as well. These ulcerations often assume a gangrenous character; the irritation increases, the itching becomes utterly intolerable, and the suffering animal dies in a condition of general marasm.

The nervous symptoms become manifest only towards the last, though they appear at an earlier period in nervous rather than in lymphatic or plethoric animals. The first of these is an excessive sensibility over the loins, which become sensitive to such a degree that the slightest compression over that region may cause the

patient to fall to the ground. The activity diminishes and movement becomes difficult, the portions of the body most affected being the hind quarters; the croup moves laterally, and the members creak during walking; the legs being dragged, and lameness manifesting itself in one or the other leg. In other cases the hocks and fetlocks flex suddenly, the hinder extremities are thrown forward, but with effort, and at times the animal falls to the ground, making no immediate attempt to rise. The symptoms are analagous to those of locomotor ataxia in man, and from this time the loss of flesh becomes more rapid, and the paraplegic symptoms increase, until the animal becomes quite unable to keep his feet.

Then the flanks are retracted, the belly drawn in, the ribs become prominent, the shoulders atrophied, the hips angular and hollowed, and finally bed-sores make their appearance, with complications of arthritis, fractures and ruptures of ligaments as the final accessories of torture and destruction, and the poor beast succumbs to a dismal fate. Paralysis of either one of the ears or of the lips sometimes appears, to complete the disease, while again, still further complications of laminitis, pneumonia, enteritis and purulent infections are not unfrequently added to the incidents and causes of death.

Progress, duration and termination.—The disease is always slow in its course, and appears to possess a chronic character, modified by intermittent symptoms, which are followed by paroxysms.

The duration of the disease is a very variable feature. Recovery may take place, especially in mares, within two months, but, on the other hand, animals may succumb to an attack within the same period, especially if of feeble habit and debilitated constitution.

From six to eight months is the ordinary duration; it seldom lasts beyond that period in mares, although in stallions it may persist for an entire year. Exceptional cases of three, four and five years' duration are recorded.

Recovery by natural process, or from spontaneous causes, is rare, and when it takes place must be attributed to the influence

of therapeutic aids. Haubner admits that the average mortality is 40 per cent., but may sometimes reach 70 per cent. It is mortal in males oftener than in females. Convalescence is often long protracted; recovery is often more apparent than real, and relapses are common, especially under the influence of genital excitation. The disease may recidivate.

(*To be continued.*)

GLANDERS.

BY VETERINARIUS.

A Contribution for the Prize offered by the U. S. Veterinary Medical Association for Papers published in the AMERICAN VETERINARY REVIEW.

(*Continued from page 163.*)

THE DIFFERENTIAL PATHO-ANATOMICAL DIAGNOSIS IN GLANDERS.

This most important subject was very ably defined by Professor Schutz in his instructions to the Chief Veterinary Police Officers of Germany.

Prof. Schutz states that glanders finds its origin in a contagious principle.

The specific product in glanders is a small nodule about the size of a millet seed, composed largely of round cells, and more or less stroma of connective tissue. These noduli must, therefore, be classed among the connective or granulation neoplasms. This tissue is soft, and contains more or less fluid in its meshes, and is of a yellowish-white color. The richer such neoplasms are in cellular elements, the more clouded do they appear.

The fresh nodule in glanders is gray in color, and consists of small round cells; the older ones are of a yellowish color, and contain large cellular elements. These nodular neoplasms undergo necrobiotic degeneration, frequently leading to the formation of cavities when situated in the midst of parenchymatous organs; when situated superficially, as in the nasal mucosæ or in the skin, such degeneration leads to the formation of ulcers. When fatty metamorphosis occurs in these noduli, they assume a clouded yellow color, which has frequently led to said noduli being looked upon as (genuine) tubercles.

Many pulmonary diseases of the horse are characterized by the presence of circumscribed productions of the most variable character and form, and veterinarians frequently designate every variety of nodule met with in the lungs as tubercle. Even in the present day we often find glanders noduli mistaken for genuine tubercles. Even though the products in tuberculosis resemble those of glanders, still, from an etiological point of view, they vary essentially from one another. It must also be borne in mind that genuine tuberculosis is an exceedingly rare disease in the horse, and that the fresh tubercle is pearly and transparent, the older opaque and whitish, while the nodule of glanders is, when fresh, gray, but later on yellow, and finally bears a strong resemblance to small abscesses. A glanders nodule resembles tubercle in that they frequently form nests or conglomerate masses, and break down, especially when superficially situated, as in a mucosa.

It is incorrect to compare the ulceration of a glanders nodule to the bursting of an abscess. When an abscess comes to development, the tissues are destroyed, in place of which a cavity is formed, filled with pus, which finally bursts, leaving a distinct interruption in the continuity of the tissues involved; on the contrary, a glanders nodule undergoes a gradual process of ulcerative destruction, the material which escapes being the detritus or remnants of destroyed tissues. This softening or ulcerative degeneration does not at once complicate the entire nodule; the base and circumference of the neoplasm are the seat of neoplastic granulations, presenting a lardaceous appearance. Such an ulcerated nodule gradually cleans itself of its necrobiotic elements, leaving nothing but a superficial ulceration having a peculiar form, which has given to it the name of "lenticular ulcer."

These lenticular ulcers have frequently been described as erosions, which is entirely wrong. An erosion is the removal of the epithelial covering from underlying tissues. In lenticular ulcerations, not only the epithelium, but a portion of the tissue under it, undergo necrobiotic destruction.

The development of glanderous nodules, and the progressive process of ulcerative destruction which it undergoes, can be observed best in the nasal mucosa. In a short time, in the circum-

ference or deeper-seated tissues of a glanderous nodule, at some distance from it, a new nodulus and ulcer develops, by coalescence and sequental extension of the ulcerative processes, ulcerated surfaces develop of variable extent and form, and are known as secondary ulcers. The latter are characterized by their swollen, irregular edges and uneven base, and the presence of newly developed small noduli that have not yet undergone destruction. This indicates that the primary nodulus, or ulceration, exerts an irritative action upon the adjoining tissues, causing similar disturbances in them, and indicates that the contagious elements of glanders proliferate in the primary noduli and penetrate the adjoining tissues by means of the capillary circulation. The secondary processes can also appear at a distance from the primary. This extension of the pathological processes is especially frequent in the respiratory tract. They can extend to the inferior part of the nasal cavities or the sinusæ of the head, the œsophagus, larynx, trachea, bronchial tubes, or even the lungs. The ulcerations may be either superficial or profound, according to their situation in the tissues; but scarcely any tissue is free from them. They often extend to the perichondrium in the nasal septum, or the valvular covering of the Eustachian tubes, or the cartilages of the larynx, tracheæ and bronchial tubes, and to the periosteum and underlying osseous tissues in appropriate localities, causing necrobrosis in all such parts. Perforation of the septum nasi is not infrequent, or cicatricial contractions and deformations occur in other parts of the respiratory tract.

The processes of glanders in the mucosæ are often connected with simple inflammatory disturbances in their vicinity. The noduli and ulcers are frequently surrounded with a nucleus of injected blood-vessels, which renders their recognition easier than it would otherwise be. In most cases the adjoining mucosa is in a more or less catarrhal condition, swollen, and secreting an aqueous, purulent or hæmorrhagic mass.

The quantity and nature of the secretion in glandered horses is decided by the seat and extent of the catarrhal irritation, more than the ulcerative processes in the anterior portion of the respiratory tract. The bronchial mucosa is frequently the seat of such

excessive irritation that their lumena are completely filled with a muco-purulent mass. The catarrhal products often extend from the nasal cavities to the frontal and lateral sinuses of the head, filling them with a more or less dense secretion of a similar character. The catarrhal products can also extend through the Eustachian tubes to the guttural pouches. When the irritation is very violent, the secretions acquire a hæmorrhagic character. These secondary inflammations often complicate the deeper-seated tissues. The mucosa, and also the submucosa of the nasal cavities, become intensely swollen and œdematous. In the larynx such processes often cause "œdema glottidis."

When the infiltrative processes have reached a certain depth in the tissues, a purulent perichondritis is often found in the septum nasi and larynx, frequently leading to necrosis and perforation, or to serious cicatricial retractions.

The ulcerations in the glands, either primary or secondary, often heal by cicatrization. These cicatrices have a more or less stellate form. When the ulcerative processes extend equally in all directions from a primary nodule, the healing commences in the center, while the neoplastic and ulcerative processes extend at the peripheries. These large ulcerations also heal by the granulations, and are frequently the seat of more or less extensive hæmorrhages. This cicatrization does not always occur in a harmless manner; all sorts of malformations in the complicated parts may occur—even the utter destruction of diseased tubes or cavities. Definite healing seldom results, for new noduli and ulcers frequently develop under the cicatricial tissue or in its circumference; similar processes also develop within the cicatrices, giving the impression that the latter were also the object of denteropathic invasion—hence cicatrization is not always the termination in glanders, but simply a part of the same.

The processes in the skin, as well as the mucosa, are generally accompanied by complications of the lymphatic system, which are of a secondary nature and bear direct connection with those parts from which the glands receive their lymph. The contagious principle is taken up by the lymphatics in and around the primary diseased localities and conveyed to the first lymph-glands in their

course, and from these the irritans is conveyed over the system. When the disturbances in the septum nasi are limited to one side, the submaxillary, pharyngeal, and other lymphatics upon that side only, become diseased. The same occurs when glanders complications begin on one or the other extremities. The diseased glands become hypertrophied, and upon section present a refracting surface of a reddish or gray color. Later on, they become drier and the cut surface not so smooth, and contain white spots or striæ which correspond to the swollen follicles or thickened interfollicular tissue; in acute glanders, when the irritans is severe, more or less hæmorrhages are present. This is the first or simple hyperplastic stage; later on, the glands become more dense, and the cut surface is of a red-white color; the gland seems to be composed of medullary tissue. This stage is known as that of "medullary hyperplasia." In neither of these stages does the cellular hyperplasia attain the degree of development frequently occurring under other irritative conditions of the nasal mucosa, accompanied by complications of the neighboring lymph-glands. In glanders these glands seldom become larger than a walnut, and the individual lobules of the gland become flattened by mutual pressure, but do not adhere; at this period the capsule of the gland is generally unchanged.

In the living animal one can frequently notice that the glands are somewhat painful on pressure. If the glanders processes in the skin and nose heal, the supply of irritating material is shut off from the lymphatics, and the glands again become smaller, though not assuming their original size. This does not generally occur, for in most cases the disease is characterized by extension, though healing in the primarily affected parts is frequent. The enlarged condition of the glands can increase through the development of neoplastic elements in the interstitial tissue or stroma of the same, by which they become intensely hard and indurated. These processes extend to the capsule and periadenon tissue, frequently causing their attachment to the overlying skin or adjoining parts.

The earliest changes which are capable of macroscopical demonstration in the glands are small circumscribed spots of a grayish-

yellow color, which occur in nests or are disseminated over the gland, and occur either in the medullary or cortical portion of the gland. The other parts of the gland are in a condition of cellular hyperplasia of a simple irritative character. The yellow spots become larger, and undergo purulent degeneration or desiccation (necrobiosis), forming caseous conglomerates or noduli. These abscesses or conglomerates frequently occur in the midst of a hypertrophied gland. The specific irritant having gained access to the gland, causes the development of chronic, indurative conditions.

Glanders being a specific disease, the pathological disturbances must be divided into (1) primary or specific, and (2) secondary or simple inflammatory processes. The one class may be compared to those which follow any form of irritation; the other, on the contrary, possess peculiarities which are specific to glanders.

In glanders the entire gland is seldom found complicated; as a rule, single parts or lobuli of the glands are more affected than others.

Suppurative processes in or around lymph-glands, which finally escape outwards, are very rare in glanders. Simple suppurative inflammatory processes can, on healing, leave the glands in a condition resembling that of glanders. The contents of such abscesses can desiccate and become cheesy, or peri-œdoid indurations may occur by which the glands become hard and more or less attached to surrounding structures.

When in specific disease of lymph-glands in glanders, other centers of disease occur, and a viscid, purulent mass forms the contents of the gland, and the cells undergo disintegration, leaving a fatty detritus; the cavities being filled with a soft mass of fat granules, and the noduli do not become completely caseated, but acquire a soft, yellowish center—these are valuable points for differential diagnosis. If doubts still remain, they can be removed by giving special attention to the condition at the primary seats of disease, or by microscopic examination of the contents of the noduli.

Lymph-glands in a condition of simple hypertrophy frequently undergo a mild form of fatty metamorphosis. A cross-section of

the same appears studded with yellowish-white points or striæ, while the remaining parts of the gland are in a gray, hyperplastic condition, also composed of fatty detritus. If the glands are gray or blackish in color, and indurated, which is often the case with the bronchial lymph-glands, the cross-section presents a variegated appearance.

Calcareous noduli, of various dimensions and shapes, surrounded by a firm capsule, are often found in lymph-glands, especially those in the vicinity of the bronchials. These noduli can be easily removed, leaving their cavities or surroundings distinctly visible; on cross-section they present a lamellated structure. It is not always possible to give a decision as to the primary nature of these noduli—that is, whether they are of entozoöic origin. Many veterinarians have ascribed to them an etiological connection with glanders, without sufficient reason. Why the noduli of glanders should become calcified in this isolated manner cannot be explained. On the other hand, it is probable that noduli which are not so easily removed, and which have no striated structure, are connected with glanders. But as the calcification of glanders nodules in these organs has by no means been proven, these objects must at present be looked upon as of an etiological doubtful origin. Large calcified masses occupying distinct sections of a gland must be considered as a metamorphosis occurring in retained purulent material. Glanders noduli undergo dissolution in course of time, and are transformed into a mass of detritus capable of absorption. This mass is taken up by the circulation as well as the lymphatics; in the former case they cause direct pollution (infection) of the blood—glanders dyscrasis; the latter has been partially proven experimentally, by injecting blood from horses affected with glanders into healthy ones; and the same fact is also proven by the appearance of metastatic processes in distant parts of the organism of the same animal.

In glanders the lungs are generally the seat of such processes; therefore the necroscopist must carefully distinguish between primary and secondary processes in this disease. Secondary pulmonary glanders is a very common occurrence. It is evident that when a glanders dyscrasis occurs, secondary pulmonary processes

develop in other organs, such as the liver, kidneys, heart, and also in muscles, bones, etc. Such a dyscrasis is by no means a permanent condition, as, when infectious elements gain access to the blood, they must soon be removed by natural processes, from the fact that they find a resting place in certain tissues or organs, where they develop metastatic centres or pass away with the secretions, urine, etc. The latter was confirmed by numerous experiments. If the disease continues in certain parts, it is self-evident that the tendency to metastatic processes must also continue. Processes in the anterior respiratory passages and skin often heal, and the lymph-glands undergo a retrograde metamorphosis and retract, and that the secondary metastatic processes are only observed after the lapse of a considerable time. This period is often spoken of as "latent glanders"—that is, the disease is present in invisible organs—pulmonary glanders. If a horse should be killed at this time, no striking pathological changes except those in the lungs are found; slight changes in the anterior respiratory organs often heal without leaving an easily recognized cicatrix, and the tumefactions in the lymph-glands disappear quite as often, especially when the inflammatory processes are of a non-specific character. Such cases have led to the mistaken assumption of the existence of primary pulmonary glanders. It is also well known that this latent or hidden form of glanders often gives rise to secondary infection, the development of new local centers, and a suspicious pneumonia, which render the disease again open to occult demonstration. Such cases may possibly have led to the assumption of the spontaneous origin of glanders.

The specific glanders noduli in the lungs always appear in numbers, never as single phenomena; at first they are of a gray color, and moist, but later they become yellow, and dry in character. They either lie subpleural, so that they can be seen through the same, or in the substance of the lungs; they develop in the stroma or interstitial tissue of these organs. The fresh noduli are surrounded by an irregular zone of inflamed parenchymatous tissue, the circumferences of which are not sharply defined. These zones are hyperæmic, moist, atelectatic, and present a smooth surface or section, though they are sometimes granulated

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fibrinous pneumonia. The nodules are separated from the pneumonic surrounding by a ring of red tissue. In passing the fingers over such a lung, one can not only feel the noduli specific to glanders, but also the pneumonic centers surrounding them. The number of noduli present varies; in some lungs they are present in thousands, sometimes disseminated, sometimes in nests so thick together that the infiltrated pneumonic centers coalesce, and large sections of the lungs are transformed into a dense and atelectetic mass. The noduli and their surroundings soon undergo certain changes. The gray noduli become opaque and yellow, surrounded by a transparent gray and vascular tissue, which can be traced to its connection with the interlobular tissue and the septa of the alveoli.

These yellow centers are slightly caseous, but do not present a thoroughly desiccated appearance; their circumferences are irregular, and interrupted by the extension of processes of a like character into the fibrous surroundings; so that these noduli cannot be removed, even with a knife, without tearing the tissue in which they are situated. When a confluence of a large number of noduli takes place, large sections of the lungs are transformed into masses of grayish-white indurated tissue, enclosing necrobiotic noduli in their midst; upon section, these noduli appear as small yellow centers, surrounded by a sort of capsule with irregularly marked outlines. At other times these centers are of a purulent character, surrounded by infiltrated pulmonary tissue, which is often complicated by softening disturbances that began in the specific product of glanders, giving rise to the formation of cavities of variable size and form, filled with a purulent or soft-like mass. New eruptions may be seen in the vicinity of these centers, which are valuable in recognizing the specific nature of the disturbance. At other times disintegrated masses are found surrounded by a pale gray layer of fibrous tissue forming a sort of capsule; cross-section reveals the existence of cavities and canals, filled with purulent and necrotic material. The ulcerative processes frequently lead to the erosion of blood vessels and sequential hæmorrhages; the latter are, however, often prevented by the formation of thrombi in the vessels—a very common occurrence in the lungs

in glanders. Small embolic centers may be mistaken for freshly developed glanders noduli, varying in size, and filled with a yellowish mass, surrounded by a hyperæmic ambus of a dark red color, having a smooth surface on section.

Hyperæmic tissue surrounding glanders noduli is never black-red, and not so extensive, and does not contain so much fluid blood as the hæmorrhagic. Acute broncho-pneumonia centers may also be mistaken for those peculiar to glanders; the same are small isolated complications, or they may be seen in groups, and of a red or reddish-gray color, projecting somewhat above the cut surface of the lung; the bronchial tube appears as a small yellowish point in the midst of pneumonic infiltration; by pouring water gently upon such points, one can easily demonstrate the presence of the bronchial tube, which will appear as a small, round hole when you have washed out the mass with which it was filled. Ordinary pneumonia centers that have undergone a form of gangrenous dissolution, have been mistaken for those of glanders.

Pneumonia in the horse often occurs in a multiple form—*i. e.*, numerous inflammatory centers distributed over the substance of the lungs; they are at first hyperæmic and glancing, but later on become dry, anæmic, and of a yellowish-white color. Necrobiosis of the pulmonary tissue frequently occurs, leading to the development of a sort of sequestor, or a mass of broken-down tissue enclosed in a sort of capsule, which marks the line of demarkation from still healthy tissue. It is in this way that the so-called abscesses in the lungs are formed. Fresh ones are surrounded by intact or infiltrated lung tissue, while older ones are surrounded by a sort of capsule of indurated tissue. The bronchial lymph-glands are at the same time in a condition of cellular or fibrous hyperplasia. The fresher these conditions, the more easily can they be distinguished from others, because one cannot find the gray or yellowish noduli of glanders in the lungs at such times. The differential diagnosis is, however, possible later on, because it seldom happens in glanders that one finds either single or several infiltrated lobuli separated, as it were, by these gangrenous processes in the direction of the interlobular striæ of connective tissue, while such is the rule in pneumonia. Further: the necrotic

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tissues in pneumonia which were previously very full of blood, do not give up their color as in glanders, but retain a very marked yellowish-red color. Finally, one must always have recourse to a critical study of the conditions of other organs. The frequent appearance of calcified noduli of a size corresponding to those of glanders, has often led to mistaken conclusions. They are generally round, with sharply defined limits, and enclosed in a very delicate, transparent capsule of connective tissue, from which they can easily be removed. The inner surface of this capsule is perfectly smooth. It has never been possible to find any adhesions between these objects and the bronchial tubes; cross-section of these calcified noduli shows a striated structure; they are often distributed over the lungs in great numbers, as well as in the bronchial glands, but less frequently in the submaxillaries; they seem to have a special predilection for the liver. *These things have no connection with glanders.*

Bronchitic, peri-bronchitic and broncho-static noduli have been frequently mistaken for those of glanders of an old date. It is natural that this error should occur when the extension which the idea of primary pulmonary glanders has attained among veterinarians is taken into consideration.

These bronchial noduli are the product of chronic inflammatory processes in the parietes of the bronchials; some develop in the lumen of the tube, causing obstruction—bronchitis proliferans; in other cases, besides thickening of the walls of the tube, a purulent fluid is secreted, causing distension of the tube—bronchitis chronica catarrhalis. When the irritative processes extend to the tissues surrounding the tubes, a peri-bronchitis is the result, causing the development of connective tissue and apparent thickening of the walls of the air tubes. The purulent mass frequently accumulates and becomes caseous—bronchitis caseosus—causing complete obstruction; at other times this mass calcifies, and the lime-like material is enclosed by the bronchial wall. These irritative processes generally occur in and around bronchial tubes of the smallest calibre; they may be quite extensive, or more or less sharply circumscribed; in the latter case the tubes look as if studded with small noduli throughout their extent—bronchitis and

peri-bronchitis nodoso. They present themselves as small bodies, about the size of a millet seed; they are often numerous, but at other times occur only here and there. In the case of bronchitis proliferans, these noduli have a gray color, and upon section the lumen of the tube can often be seen. In bronchitis catarrhalis and caseosa, the centers of the nodules are filled with purulent or caseous material, surrounded by pearly-gray tissue, so that what was apparently a nodule is, in reality, nothing but the cross-section of an indurated bronchial tube. When the caseous material filling the bronchials at such a point becomes calcified, a small kernel of lime is found in the center of such a nodule, and is easily removed.

Bronchostasis is a progressive process by which the lumen of a tube becomes greater, and in the horse occurs most frequently in the smaller tubes (it can also occur in the large tubes) of the anterior and lower, or central lobes, of the lungs; they generally occur in multiple form, seldom isolated. According to the thickness of the wall of the tube, they can be classified as: (1) Atrophy, and (2) Hypertrophy; according to form, as: (1) Cylindrical, (2) Sacculated, and (3) Serpentine, etc. In every case of bronchostasis, bronchitis in one form or another is present. Outside of them, pneumonia processes frequently come to development. The circumscribed or sacculated form often appears as noduli, about the size of a pea, but cross-section soon reveals their true nature.

It should be impossible to mistake any of these conditions for the specific one of glanders, though one or all of them may appear in the same lung at the same time as those of glanders, or when there is no evidence of glanders. In fact, they are not uncommon in old horses in all varieties and degrees of development.

In all glanders noduli, the purulent or caseous mass in the center is always in immediate relation with pulmonary tissue; in these bronchial conditions, never—the bronchial wall invariably forming a line of demarkation. In the latter, the contents can always be removed, leaving the wall intact; in glanders, never. Another fact of diagnostic value is, that the noduli of glanders are seldom of the same age; besides old and anæmic, fresh ones are also present. Again: as a rule, the noduli in glanders are of metastatic origin, and in doubtful cases the exact examination of

other parts of the respiratory tract, as well as body, will certainly lead to a safe conclusion. Finally, it is necessary to mention those chronic inflammatory or indurative processes in the lungs which generally find their origin in a chronic pleuritis or bronchitis, or begin directly in the perialveolar tissue. Such processes frequently lead to the development of circumscribed centers of a more or less nodular character, but of variable size, some as large as a hen's egg; they frequently occur close to one another, or coalesce and form large, irregular, circumscribed and indurated masses in the lungs; they are very common in the anterior and middle lobes, and on cross-section give manifest resistance to the knife, being dense and hard, and present a white or gray color. If such changes are in the vicinity of the pleura, the latter becomes thickened, white and opaque; adhesions between the pleuræ are then frequent.

Obstruction of the lumen generally follows chronic processes in or around the bronchial tubes; the same leads to atelectatic conditions of the parts supplied with air by the obstructed bronchials. In anæmic animals, such sections of the lungs are pale in color. If the atelectasis is of long duration, then atrophy of the pulmonary tissue results. These changes occur principally in the anterior lobes and in the lower and middle portions of the lungs. When these atelectatic or atrophied portions of lungs become the seat of chronic pneumonic processes, they remain small, soft and anæmic. It is evident that both conditions can be present at the same time.

It is no uncommon occurrence to find that ulcerative (destructive) processes have originated in the distended portion of bronchial tubes, finally causing perforation of the wall and pneumonic disturbances of both an ulcerative and indurative character. As the progress of the same can be traced, they need not be mistaken for glanderous disturbances.

It is, therefore, plain that it is necessary to distinguish quite sharply between the specific productions in the lungs that are peculiar to glanders and due to its specific cause, and those secondary complications which, while frequently due to the action of the same cause, may either antedate the development of the specific products, or even occur entirely without their ever happening.

AMERICAN VETERINARY COLLEGE.

HOSPITAL DEPARTMENT.

HÆMORRHAGE AND SEPTICÆMIA AS COMPLICATIONS OF CASTRATION.

BY JULIUS HUELSEN, Jr., D.V.S., House Surgeon.

In considering the complications of castration, prolonged hæmorrhage and septicæmia are perhaps not as common as others, and the following peculiar case is therefore worthy of notice:

A valuable sorrel racing colt, four years of age, $15\frac{1}{2}$ hands high, was cast for operation at 8 o'clock A.M., June 7, 1887, after due preparation as to feeding and administration of anæsthetic in the shape of 3 vii. chlor. hydr. The method of operation was that of limited torsion, the instruments employed being those of twisting forceps, which have had frequent successful use at the hospital. The posterior septum of the cord with the efferent canal and small testicular artery were first divided by scalpel, as usual, and the cord then amputated without any more than the ordinary struggles of the animal, after about fifteen turns of the torsion forceps.

In this case, however, the twisting of the artery seemed to have had no effect, for hæmorrhage in a small stream at once commenced from the right side; but as this must soon naturally close by coagulation, there was no occasion for alarm, and the patient was placed in the stall for observation.

At 10 o'clock A.M. blood was still noticed to flow, in a quick succession of drops, and a cold-water douche was applied for a time to the parts until there was an apparent stoppage, but only temporarily, and the cold water showers were continued during the day four or five times.

A pad of oakum, saturated with a weak solution of tinct. of chlor. of iron, was applied in the evening externally to the sheath; then, later, a packing of ice, supported by a bandage. Recourse was then had to tents of oakum saturated with the solution of iron, introduced into the wound (secured by suture), which was found almost filled with clot; but all of no avail.

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The blood, on examination, was found normal in color, and coagulated freely. What was the cause of this obstinate hæmorrhage could only be surmised. Was this method of castration by the process of torsion to be blamed—the coats of the artery not being properly twisted? but, even in this case, the flow should cease by natural coagulation with the agents used as hæmostatics; or was there a diseased condition of the artery, a want of elasticity, that prevented coagulation taking effect? or again, might it not be one of those peculiar cases of hæmorrhagic diathesis met with sometimes in human subjects?

June 8th.—Although there was no actual cause for alarm, the hæmorrhage being only in drops, about sixty per minute, the patient was placed under observation all last night, and early this morning more radical measures were attempted. The animal was thrown, the tent of oakum and a clot of blood quite as large as a child's head, removed, and efforts made with a pair of long forceps to find and pick up the artery for the purpose of ligating, but this was found so far withdrawn in the canal that attempts were abandoned. The cavity was then filled with four large surgical sponges and two tents of oakum, secured by suture across the edges of the wound, and the animal placed in a box stall. During the rest of the day, ice packings were placed around the sheath, alternated with douches of ice water; but the steady flow, drop by drop, continued all day, especially noticeable when the animal moved or the parts were disturbed. The sheath now showed some swelling. Temperature during the day, 98.3°; pulse, 55; respiration somewhat accelerated; appetite good. The left wound seems all right.

June 9th.—Cold water douches were continued at intervals of one hour each, all day, until the hæmorrhage, which in the morning oozed about 20 or 30 drops per minute, ceased altogether at 4 o'clock P.M. Carbolic acid injections were used thereafter. Appetite fallen off somewhat, though eating clover with relish. Temperature, 102°; pulse and respiration same as yesterday.

June 10th.—This morning the sponges and oakum and a little clot, broken down and of very bad odor, were removed. Wound washed with ice-water stream and injection of carbolic solution

every two hours until 6 o'clock P.M., when, with the carbolic solution, bichloride of mercury (one part to a thousand) was also injected. Considerable bad-smelling pus, sanious discharge, at each injection. The sheath is now considerably cedematous, though no more than usually follows castration by torsion. Temperature, 8 A.M., 102.1°; pulse, 60; respiration a little quickened. 12 M., 103.2°; 6 P.M., 103.3°. Left wound is doing well.

June 11th to June 21st.—A new complication began now, making itself more and more discernible, and of much graver import, than the hæmorrhage. Septicæmia was apprehended, and undoubtedly present, though not as yet of much progress, and prompt measures were necessary. That there was gangrene of the tissues in the right wound, the cause of which could not be exactly ascertained, was evidenced by the unhealthy, sanious, bad-odored discharge, and the system was undoubtedly under the influence of its poisonous effects. Symptoms of general disturbance are plainly visible—remittent fever, generally high in the morning and evening, about 103° to 104°, and lower at noon, about 101° to 102°. Pulse has been varying from 60 to 80 beats, wonderfully full and strong. Daily, about noon, perspires freely. From a slight bruise an abscess developed over the left eyelid, which opened itself, on the 15th, with a discharge of sanious pus, similar to that from the scrotum. Also on the off hind leg, metatarsal region, another abscess with similar discharge, caused by pressure of bandage. An abscess also opened at lower part of sheath. The cedema of the scrotum is decreasing, but the penis became quite largely swollen from the long-maintained standing position; but this soon reduced to its normal size by proper supporting truss.

During this time, remedial treatment has been actively pursued in the shape of antiseptics. Strong solution of carbolic acid and bichloride of mercury were injected every two hours into the wound. 3 ii. doses of quinine, administered four times per day, and 3 iv. dil. alcohol three times per day, in drinking water.

However, favorable symptoms are not wanting. The patient has maintained a good appetite, though at first more for clover than oats or hay; at first dull, seems brighter now, and responds

readily to manipulation over the loins. The discharge, too, within the last three or four days, is assuming a less ugly appearance and bad odor, and decreasing day by day. The temperature has decreased, and on June 19th was normal. Pulse, 48; respiration, 20, and has continued so to date.

June 20th to July 1st.—The wounds are discharging a much healthier pus, and gradually decreasing. Appetite the same, or even increasing. Still perspiring at certain times of the day. The same injections have been continued, though less frequently. Quinine twice a day, but ceased on June 26th. Commencing now to give walking exercise, about half an hour per day. Temperature, pulse and respiration normal. Wounds on near hind leg showing healthy granulations, and closing, and that of left eyelid all healed; oedema of sheath and penis all disappeared. Now administering only alcohol.

July 3d to July 5th.—From some unknown cause, temperature on the 3d rose to 103°; pulse, 55; respiration, 20; mucous membrane yellowish; constipation and loss of appetite, with slight colicky pains. Febrile symptoms, however, disappeared by administration of quinine and alcohol, with rectal injection, and now functions are again normal.

July 12th.—Discharged, to go for a time to pasture.

REPORTS OF CASES.

EXTRACTS FROM NOTE BOOKS.

BY L. C. WAKEFIELD, D.V.S.

SERIOUS FOOT INJURY, WITH NECROSIS OF THE OS PEDIS.

CASE No. 1.—May 5th I was called to see a bay mare which had been used in a horse-power. The history of the case was: Three weeks before my visit the mare, while working in the machine, caught the shoe of her right hind foot in one of the logs, with sufficient force to stop the machine and throw her out of the power. Immediately after the accident she manifested some pain in the injured foot, but on having a rest of a couple of

weeks, she got better, and was put to work, and on the following day she could hardly put her foot to the ground; and when I was first called, she was suffering intense pain, and there was a very foetid ichorous discharge issuing from the coronet at the heel and around the frog.

I ordered the foot to be soaked well in warm water, and the next day I visited her for the purpose of removing the diseased horns. I first removed the sole and horny frog, and then, by probing, I found it necessary to remove the wall, which I did by sawing through the horn just below the coronet, and tearing the wall off with a pair of pincers. The resulting hæmorrhage was soon stopped with Mousell's solution. After the removal of the horn I found the plantar cushion was gangrenous, so as to necessitate a removal of its surface. The keratogenous membrane, from the point of the plantar cushion extending over the anterior part of the plantar surface and the anterior border of the os pedis, was also gangrenous, so as to necessitate removal. The unhealthy tissue under the diseased membrane was cauterized with argenti nitras, and two exposed places on the os pedis were scraped. During the operation the foot was well irrigated with a one-tenth per cent. solution of bichloride of mercury. After the operation the animal was placed in slings, and the foot was dressed daily with antiseptic cotton and a 3 per cent. solution of phenic acid. The gap in the keratogenous membrane closed very slowly, and just two months from the date of the operation it was entirely closed. In the meanwhile the wall grew very fast, so that now the lower border at the toe is within three-quarters of an inch of the sole, and the latter is thick enough, so that the injured foot bears its share of the animal's weight.

A LARGE VENTRAL HERNIA.

CASE No. 2.—A gray gelding, five years old, was let loose in a yard with some cows, and got hooked at a point below the right flank, about eight inches from the linea alba, and about five inches posterior to the border of the asternal ribs.

The owner first discovered an abrasion of the skin and a soft tumor about the size of a hen's egg. Some time after the injury

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the owner applied compresses and truss, but on their removal the tumor seemed to increase in size. The horse was brought to me, and I diagnosed the case as one of ventral hernia, which I found was easily reducible, and also that it lay under a thick portion of the panniculus.

The owner requested me to operate on the hernia, which I did May 11th. The horse was cast on his left side, and the operation was performed without the use of a twitch or anæsthesia. The rent that gave rise to the hernia was nearly vertical; consequently I made a vertical incision through the skin, about three inches long, just forward of the rent. I then dissected the skin from the panniculus, about two inches posterior to the rent; then incising the panniculus, a portion was dissected back from over the hernia; this exposed the rent. I replaced the protruding bowel with the middle finger, and took three sutures with catgut, which closed a rent nearly one and a-half inches in length. I could easily feel the balls of fecal matter in the bowel, and in applying the sutures I took pains not to injure the peritoneum, but get a firm hold in the edges of the tunica abdominalis. The pannicula was then brought together with catgut sutures, and then the skin was brought over the whole and sutured with silk. A felt compress was then placed on the wound, so as to allow the pus to escape, and was held in place by an elastic truss. The animal was allowed to get up, and was placed in a roomy box. The first week he was kept on a scanty and laxative diet. There were no complications; the wound suppurated well, was washed daily with a weak solution of phenic acid, and at the end of five weeks the wound had entirely healed, with no appearance of the hernia. The horse now takes light exercise in the harness.

LIPOMA ON THE CHEST.

CASE No. 3.—A bay gelding, ten years old, was brought to me, with a large tumor just back of the ulna, on the left side of the thorax.

The owner gave the following history: When the animal was two years old he noticed a small bunch back of the ulna, and this bunch had gradually grown until it was about as large as a man's head.

A year ago the owner employed an army surgeon to remove the tumor. The horse was prepared for the operation, but on a close examination the surgeon concluded it would be risky to undertake the operation, and refused to do it, from the fact of the subcutaneous thoracic vein lying directly over the center of the tumor.

Upon examining the tumor I found that it lay under the panniculus, and diagnosed it as a lipoma.

The owner wished it extirpated, and I undertook the operation June 11th. I first injected a 20 per cent. solution of cocaine into the panniculus. I then cast the animal on the right side, first making a bold incision, about thirteen inches long, down to the tumor, just above and parallel to the vein, and then making an incision perpendicular to the first incision and beginning at about its center and extending to the upper border of the tumor, a distance of about six and one-half inches. I lacerated the fibrous bands that attached the tumor to the surrounding muscles and tissues, and brought the lower half of the tumor out from beneath the vein and panniculus. I then found it was still fastened to one of the ribs by a strong pedicle, two inches in diameter; this I severed with an *écraseur*. The tumor weighed nearly ten pounds, and proved to be a lipoma. The wound healed rapidly, and at the end of five weeks it entirely healed, leaving a very small cicatrix.

PUNCTURED WOUND OF THE RECTUM—DEATH.

BY C. PEABODY, D.V.S.

Without entering into full daily details of this case, and merely referring to the treatment used as a means to make the patient comfortable, I wish to record it as an illustration of the difficulty of making a diagnosis when the history of a case is incomplete.

April 25th I was called by my friend, Mr. R., a practitioner in a neighboring city, to see with him an animal belonging to one of the departments of that city.

On inquiry by telephone, I was informed that the animal had a sore throat, with inability to swallow; that impaction of the large colon had followed, and that he now had pneumonia.

On seeing my patient, at 10 P.M., the previous history was repeated to me, and I found that a good blister had been applied to the throat, that the animal was standing with his nose stretched forward, his eyes staring, nostrils dilated, very short, increased respiration (80), pulse about 110, temperature 107° . The animal could drink, and had eaten some oats and hay during the day. The increased respiration began only in the morning, and at 6.30 P.M. the temperature was only 102° . Exploration of the thoracic cavity failing to disclose any disease in that region, I carefully inquired if the animal had received any injury, but was answered in the negative. I then examined him per rectum, to discover the condition of the bladder. This I found empty. The rectum was very dry and warm. I was only then informed that injections of warm water and soap had been given. These I directed to be stopped, as I saw no indications for them. The animal had had a severe chill about two hours before my seeing him.

Being unable to decide as to the cause of the existing disturbances, and thinking that the true nature of the disease was not yet entirely developed, I decided to make the animal as comfortable as possible, and to treat the symptoms of the case as they presented themselves. I therefore prescribed quinine and whiskey, with directions to allow him to drink water frequently, as the animal appeared very thirsty.

The next morning I was informed by telephone that the animal appeared much better. His pulse had fallen to 60, the respiration to 40, and the temperature to 103° . I saw him at 5 P.M., and found that the pulse had risen to 70, respiration 42, and the thermometer registered $104\frac{1}{2}^{\circ}$. The general appearances were very similar to those of the previous day. The mucous membranes were highly congested; the animal moved quite stiffly behind; the throat was swollen; when attempting to micturate, he stretched out and pawed, and then passed but very little urine. His bowels had not moved since the night before. The lungs, when examined again, were found healthy, but pressure on the

abdominal walls gave pain, and more especially on the off side, and well up in the flank. Another inquiry as to the possibility of the animal having received local injury, was answered in the negative.

I proceeded then to make another rectal examination, which proved to be very painful to the animal. The rectum was empty and dry, and when the hand was introduced the respiration became rapidly increased. Pushing my arm well into the rectum, I at last found the cause of the trouble.

Before removing my arm from the rectum, I inquired what kind of syringe had been used in giving him the injections, and was shown a metallic instrument that would hold about a quart of fluid, with a nozzle twelve inches long. I found also that the last injection had been given at 7.15 P.M. the day before, and that it was about 7.30 when the hurried respiration was observed. "The last injection was well kept," said the assistant. Of course it was!

The trouble proved to be a large hole a little to the right of the median line of the rectum, leading directly into the abdominal cavity. The four fingers of my hand were readily introduced through this opening, and the intestines were easily felt. The laceration occurred about fourteen inches from the anus.

Diagnosis made at last; the prognosis was unfavorable.

The animal at this time was quite uneasy, and showed considerable pain, but was readily quieted by a full dose of chloral.

From this period to the time of his death, the animal showed variations in the pulse between 48 and 60; respiration from 16 to 52, and temperature from 101° to 104°. At times he would eat a few pieces of carrots, some grass, sloppy food, etc. When the rectum became full, he would press his buttocks against the partition of the stall. On removing the fœces from the rectum, he would become easier. At times he would have diarrhœa. On the fifth day after the injury a swelling appeared in the inguinal region of the off side, and continued to increase until death. On the 3d of May, eight days after receiving the injury, he had cold sweats on both

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flanks over a space about eight inches wide. On the twelfth day he discharged with the urine a thick, creamy pus, very foetid. At times the urine would be clear, and at others purulent. At first he lost but little flesh, and seemed to suffer but little from colicky pains, which were always relieved by chloral. He lived twenty-nine days from the time of the injury.

Autopsy.—There was gangrene of the rectum at the seat of the injury, and sloughing from healthy tissues. The opening in the rectum was about $3\frac{1}{2}$ inches in diameter. There was an abscess in the pelvic cavity, also one on the pelvis of the right kidney, and one in the inguinal swelling of the right side. All the organs otherwise were healthy.

EXTRACTS.

PASTEUR'S TREATMENT OF HYDROPHOBIA.

An abstract of the Report of the British Committee of Inquiry.

The following abstract is given in the *Lancet* for July 2:

"The report of the committee nominated by the President of the Local Government Board in April, 1886, to inquire into M. Pasteur's treatment of hydrophobia, was presented to Parliament on Monday last.

"The report commences by stating that it was found necessary that some of the members of the committee should, together with Mr. Victor Horsley, the Secretary, visit Paris so as to obtain information from M. Pasteur himself, to observe his method of treatment, and investigate a considerable number of cases of persons inoculated by him; and, further, that a careful series of experiments should be made by Mr. Horsley on the effects of such inoculation on the lower animals. Mr. Horsley's experiments are stated to entirely confirm M. Pasteur's discovery of a method by which animals may be protected from the infection of rabies. If a dog, rabbit, or other animal be bitten by a rabid dog and die of rabies, a substance can be obtained from its spinal cord which, being inoculated into a healthy dog or other animal, will produce rabies similar to that which would have followed directly from

the bite of a rabid animal, or differing only in that the period of incubation between the inoculation and the characteristic symptoms of rabies may be altered. The rabies thus transmitted by inoculation may, by similar inoculations, be transmitted through a succession of rabbits with marked increase of intensity. But the virus in the spinal cord of rabbits that have died of inoculated rabies may be gradually attenuated by drying the cords, so that after a certain number of days' drying it may be injected into healthy rabbits or other animals without any danger of producing rabies; and by using on each successive day the virus dried during a period shorter than that used on the previous day an animal may be made almost certainly secure against rabies, whether from a bite or from any method of subcutaneous inoculation; and this protection is proved by the fact that, if animals so protected and others not thus protected be bitten by the same rabid animal, none of the first set will die of rabies, and, with rare exceptions, all of the second set will succumb.

"It may hence be deemed certain that M. Pasteur has discovered a method of protection from rabies comparable with that which vaccination affords against infection from small-pox. It would be difficult to over-estimate the importance of the discovery, whether for its practical utility or for its application in general pathology. It shows a new method of inoculation, or, as M. Pasteur sometimes calls it, of vaccination, the like of which it may become possible to employ for protection of both men and domestic animals against others of the most intense kind of virus. The duration of the immunity conferred by inoculation is not yet determined; but during the two years that have passed since it was first proved there have been no indications of its being limited. The preventive treatment by M. Pasteur is based on the foregoing experience; but the determination of the success of the method is far from easy, owing to (1) the difficulty in determining whether the bites were really those of rabid animals; (2) the probability of hydrophobia in persons bitten by dogs that were certainly rabid depending very much on the number and character of the bites, whether they were on exposed parts or parts protected by clothing; and in all cases in the amount of bleeding; (3) in all

cases the probability of infection may be affected by speedy cauterizing or excision of the wounded parts, or by various washings, or other methods of treatment; (4) the unequal danger of bites of different species of animals, and even of different dogs. In some groups of cases the percentage of deaths among persons bitten by dogs believed to have been rabid has been estimated at only 5 per cent., in others at 60 per cent., and the mortality from the bites of rabid wolves has been variously estimated at from 35 to 90 per cent.

"By the courtesy of M. Pasteur the committee were enabled to personally investigate ninety cases treated by him, these being mostly those which had been earliest treated, in which the periods since inoculation were longest, and living within reach in Paris, Lyons, and St. Etienne. Among the ninety cases there were twenty-four in which the patients were bitten on naked parts by undoubtedly rabid dogs, and the wounds were not cauterized or treated in any way likely to have prevented the action of the virus; there were thirty-one in which there was no clear evidence that the dog was rabid; others in which the bite had been inflicted through clothes. It is estimated, from the experience of the results of bites in other cases, that, had they not been inoculated, not less than eight among these ninety persons would have died. Not one of them has shown since the inoculation any signs of hydrophobia.

"Since, in order to quiet fears, M. Pasteur has been obliged to inoculate many in whom there was no satisfactory evidence that the bite was that of a rabid animal, it might be unjust to estimate the total value of his treatment in the whole of his cases as being more than the rate of mortality observed in them compared with the lowest rate observed in any large number of cases not inoculated. This lowest rate may be taken at 5 per cent; and, as between October, 1885, and the end of December, 1886, M. Pasteur inoculated 2,682 persons (including 127 from this country), the mortality should have been 130. But at the end of 1886 the number of deaths was 31, including 7 bitten by wolves, in whom the symptoms of hydrophobia appeared while they were under treatment; in fact, the actual percentage mortality was be-

tween 1 and 1.2, showing, on the lowest estimate, the saving of not less than 100 lives. Of 233 persons bitten by animals in which rabies was proved, only 4 died. Without inoculation, at least 40 would have died. Among 186 bitten on the head or face by animals in which rabies was proved, only 9 died, instead of at least 40. Of 48 bitten by rabid wolves, only 9 died, instead of nearly 30. Between the end of last December and the end of March, M. Pasteur inoculated 509 persons bitten by animals proved to have been rabid; only 2 have died, one of these, bitten by a wolf a month before inoculation, dying after only three days' treatment. The committee think it therefore certain that the inoculations practised by M. Pasteur have prevented the occurrence of hydrophobia in a large proportion of those who, if they had not be so inoculated, would have died of that disease. And his discovery shows that it may become possible to arrest by inoculation, even after infection, other diseases besides hydrophobia. His researches have also added very largely to the knowledge of the pathology of hydrophobia, and supplied a sure means of determining whether an animal which has died under suspicion of rabies was really affected with that disease or not."

The question whether the method itself entails risk to health or life is then discussed, the distinction between the ordinary method and the "intensive" method being pointed out. By the first method there is no evidence or probability of any danger to health at all; but after the intensive method, which is only practiced in the most urgent cases, deaths have occurred which might possibly be attributed to the inoculations rather than to the original infection. Yet in the worst cases the intensive method is relatively more efficacious than the ordinary method, nor is the rate of mortality greater after the former method than after the latter. Certain cases, one of which is detailed, have, however, excited suspicion from the mode of death. The case related is that of a man bitten by a rabid cat at the Brown Institution, treated by M. Pasteur the next day by the intensive method, continued during twenty-four days, and dying about a month later with symptoms of acute ascending paralysis. The man was very intemperate, and had been exposed to chill while crossing the

Channel on his return home. Mr. Horsley proved that his death was due to the virus of rabies, by using a portion of his spinal cord for the inoculation of rabbits and dogs, who died with characteristic signs of paralytic rabies such as usually occur in rabbits. Yet it is by no means certain that the fatal issue in this and in other cases treated by the intensive method was not due to the original infection. M. Pasteur has, however, greatly modified this plan of treatment, which he employs in none but the most urgent cases.

"The final paragraphs of the report, which embody practical suggestions, may be given *in extenso* :

"The consideration of the whole subject has naturally raised the question whether rabies and hydrophobia can be prevented in this country. If the protection by inoculation should prove permanent, the disease might be suppressed by thus inoculating all dogs ; but it is not probable that such inoculation would be voluntarily adopted by all owners of dogs, or could be enforced on them. Police regulations would suffice if they could be rigidly enforced. But to make them effective it would be necessary (1) that they should order the destruction, under certain conditions, of all dogs having no owners, and wandering in either town or country ; (2) that the keeping of useless dogs should be discouraged by taxation or other means ; (3) that the bringing of dogs from countries in which rabies is prevalent should be forbidden or subject to quarantine ; (4) that in districts or countries in which rabies is prevalent the use of muzzles should be compulsory, and dogs out of doors, if not muzzled or led, should be taken by the police as 'suspected.' An exception might be made for sheep-dogs and others while actually engaged in the purposes for which they are kept. There are examples sufficient to prove that by these or similar regulations rabies, and consequently hydrophobia, would be in this country 'stamped out,' or reduced to an amount very far less than has hitherto been known. If it be not thus reduced, it may be deemed certain that a large number of persons will, every year, require treatment by the method of M. Pasteur. The average annual number of deaths from hydrophobia during the ten years ending 1885 was, in all Eng-

land, 43; in London alone, 8.5. If, as in the estimates used for judging the utility of that method of treatment, these numbers are taken as representing only 5 per cent of the persons bitten, the preventive treatment will be required for 860 persons in all England; for 170 in London alone. For it will not be possible to say which among the whole number bitten are not in danger of hydrophobia, and the methods of prevention by cautery, excision, or other treatment, cannot be depended upon."

The report is furnished with an appendix containing (A) an abstract report of Mr. Horsley's experiments; (B) a report on persons in France examined by members of the committee, with a list of English persons treated at the Pasteur Institute from January, 1886, to January, 1887; and (C) on M. Pasteur's methods of preventive inoculation. The report is signed by James Paget (chairman), T. Lauder Brunton, George Fleming, Joseph Lister, Richard Quain, Henry E. Roscoe, J. Burdon Sanderson, and Victor Horsley (secretary).

AN EXPERIMENTAL RESEARCH UPON RABIES.

At a meeting of the Philadelphia Academy of Surgery, held February 7, 1887, Dr. Harold C. Ernst, of Boston, read a paper on the above subject.—(*Medical Times*.)

His experiments were performed with three objects in view: first, to determine whether or not there was such a thing as a virus of rabies; secondly, if there is such a virus, does drying at an even temperature modify its strength? thirdly, does the inoculation of such modified virus afford immunity against the inoculation of a stronger virus?

The different series of experiments relating to these various points were then given in detail. The animals used in most of the experiments were rabbits, although guinea-pigs and dogs were also employed.

The following conclusions were reached:

1. That there exists in the cords and brains of animals inoculated in Pasteur's laboratory a *specific virus* capable of the production of similar symptoms through a long series of animals.

2. That these symptoms are produced with absolute certainty when the method of inoculation is by trephining the skull and injection under the dura mater; with less certainty when the inoculation is by subcutaneous injection.

3. That the strength of this virus is lessened when the cords containing it are removed from the animals and placed in a dry atmosphere at an even temperature.

4. That the symptoms produced by inoculation of this virus only appear at a certain period of incubation, distinctly shorter when the inoculation has been done by trephining than when done by subcutaneous injection.

5. That injections of the virus modified in strength by drying, and in the manner prescribed by Pasteur, exert a very marked protective influence against an inoculation with virus of full strength.

6. That a very moderate degree of heat destroys the power of the virus entirely, whilst prolonged freezing does not injure it.—*Therapeutic Gazette*.

CORRESPONDENCE.

VETERINARY LITERATURE.

Editor American Veterinary Review:

I have never before sought the columns of your publication with suggestion or complaint. In fact I have only recently stepped upon the arena of veterinary science, and it seems to me to be both prudent and wise, not to say modest and in good taste, that the younger members of the profession should rather study the experiences and conclusions of the older practitioners, and endeavor to gain wisdom from their words as they detail them through our periodicals and text-books. This I try to do, and while I felt certain that there is sufficient in the veterinary literature of to-day to occupy the thoughts and ambition of the average veterinarian, yet one is apt to form a preference in reading, and

establish confidence in the words of the author. Standard veterinary volumes are not so numerous but that one may possess them all, and then not have a very extensive library. Among our works there are gems of excellent thought and observation, well compiled, and standing as monuments to the brains and energy of their authors. But there is one man whose prolific delineations shine so brightly in the firmament of veterinary science, whose observations are so true to the subject, and the story so well told that we are never tired of the recitation, that it does appear to me as ungrateful to his genius and unjust to the rising generation of veterinary surgeons that their value should be allowed to become impaired solely by the lapse of years and the advance of science. I refer to the writings of William Percivall. Veterinary surgery has made such gigantic strides since the time of Percivall that many of the problems which his keen intellect simply suggested have been developed into positive truths; and, again, many views which were truisms in his day have since been proven fallacies by the increased facilities for study through the microscope and other modern scientific inventions for minute experimentation and discovery, that the true value of the work is in a measure lost to the reader. Percivall's pen was as gifted to portray his thoughts as his innate genius was to grasp a truth; his sentences are so smooth, his English so pure, that one often rests from the reading to admire the beauty of a description, and so clearly does he state his meaning that when the book is laid aside the writer's ideas are indelibly left with the reader.

No recent writer has supplanted the great author; it is not likely that his superb works will be eclipsed for many years to come.

The subject of this communication is a suggestion: Why not have his writings revised and brought forward to keep pace with the march of science; the accepted truths to be perpetuated; new discoveries added; certain exploded theories of his time expunged, and all made to conform with the progress of the age? Could not this be done under the auspices of our National Association, that body appointing a committee to select a man for that important work; or, if not by that means, why not a private individ-

ual of talent and experience undertake it? The reward of fame and dollars would be enough to satisfy the ambition of any man. I am sure that I have in my mind at this time a man who is eminently fitted for this task; one whose unostentatious modesty would obstruct his progress unless he were shown it to be his certain duty to the profession he loves so well. Unless one has studied veterinary medicine at the American Veterinary College, he could never know the worth of James L. Robertson, the Professor of Equine Pathology, and I am positive that every alumnus of that institution will join me in this tribute to that profound thinker and superb observer. Who can estimate the value of William Percivall's works revised by James L. Robertson? Those who have been so fortunate as to catch the words of wisdom as they fell from his lips must have seen reflected the teachings of the old English master. He is, in truth, a modern Percivall. Let him cast aside the bushel which has bedimmed for so long the brilliant candle of his genius, and do for the profession of his choice a service which will place his fame high among those who have never had the good fortune to be his pupil—those are already his votaries.

If others have suggestions to accomplish the object in view, no doubt there are many who would be glad to read them.

A CLASSMAN OF '87.

LARGE DOSES OF QUININE.

Editor American Veterinary Review:

I think it would be well if practitioners would put on record all incidents of excessive doses of medicine, with the results attending same, whether it is the result of accident or otherwise.

On the 4th inst. I prescribed for a case of pneumonia the ordinary boll, with a drachm of quinine; through a mistake, one ounce was added to each boll; one was given at 10 A. M., and at 7 P. M. I saw the horse; he was sweating freely, pulse quite full, temperature had fallen from 104° to 101°. Another boll was

ordered to be given, which was done, but before the mistake was discovered. I visited the horse about 9 A. M. on the following morning and was met by a whinnying welcome, to which I at once responded by giving a small feed of oats, which was soon put out of the way. On examination, I found the pulse not so full, body quite dry, but the temperature was back to 104°.

Here was a case where two ounces of quinine had been given inside of nine hours, without any remarkable result, except showing the effect of so large a dose—the largest, I believe, that has ever been given to a horse. I might here say that lately I have tried eserine and pilocarpin in azoturia, but without any good result. The former to assist the cathartic, and the latter for its diaphoretic action. The case terminated fatally before I had a fair chance of getting any passage of the bowels, but the action of the pilocarpin was well marked. I injected hypodermically 11 grains, and had a powerful diaphoretic action, which I believe would have had a very beneficial result if it had been used at once. The effect on the temperature was that it fell two degrees in fifteen minutes, but in a little over an hour it went from 2½ to 5½ and kept rising steadily till it reached 107½ and ended in death. The large dose of aloes and the hypodermic injection of two grains of eserine was given about ten hours before the horse died, at which time the cathartic was beginning to act.

W. H. PENDRY.

LIST OF VETERINARY PRACTITIONERS

REGISTERED IN THE RICHMOND COUNTY CLERK'S OFFICE,
STATEN ISLAND, N. Y.

H. W. Bath.....	American Veterinary College
H. E. Earle.....	Columbia College
P. C. Juhl.....	Royal Vet. Agricultural College, Copenhagen, Denmark
Wm. Rose.....	N. Y. College Vet. Surgeons
Jas. McKee.....	“ “ “

SOCIETY MEETINGS.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The regular monthly meeting of the Keystone Veterinary Medical Association was held in the Veterinary Department of the University of Pennsylvania.

The President, Professor Huidekoper, called the meeting to order at 8 p. m.

The following members were present: Drs. Huidekoper, Zuill, Hoskins, Glass, Goentner, Weber, J. K. Raynor, T. B. Raynor, Kooker.

The minutes of the previous meeting were read, and approved as read.

Dr. Zuill, chairman of the Committee on Entertainment, offered the following report:

The committee meeting at Dr. Glass's office to decide as to the best means of providing papers for the meetings of the Keystone Association, resulted as follows:—

First. *Resolved*, That each member of the Association be assigned a subject by the committee, upon which he will be expected to write. If the subject chosen be not suitable to the member, he shall be allowed to make his own choice and to announce the same to the committee, in writing, at least one month before the date of reading, at a regular meeting of the Association, when, if it be acceptable to the committee, it shall be so announced.

Second. *Resolved*, That the subjects to be discussed shall be assigned in alphabetical order.

Third. *Resolved*, That members failing to comply with these requirements, in not preparing the papers so assigned, or failing to read them on the proper dates, without sufficient excuse satisfactory to the committee, shall forfeit their membership in this Association, and shall be reinstated only upon a unanimous vote.

Fourth. *Resolved*, That the President of this Association appoint a member to report (in writing) to this Association a case occurring in his practice, at a meeting following his appointment. (Signed)

W. L. ZUILL,
W. S. KOOKER,
ALEXANDER GLASS.

On motion, the report was received, and the committee discharged.

Prof. Huidekoper moved that at the next meeting the report be offered as an amendment to the By-Laws; that further business be dispensed with, and that we adjourn to the lecture room. Carried.

Profs. Huidekoper and Zuill then presented ten newly graduated students, and, with the members of the Keystone, all partook of a sumptuous collation, from which your Secretary was compelled to withdraw in order to catch the midnight train.

CHAS. S. GOENTNER, *Secretary*.

MASSACHUSETTS VETERINARY ASSOCIATION.

The fourth annual meeting of the Massachusetts Veterinary Association was held at Young's Hotel, Boston, April 27th, at 6 o'clock p. m., President F. H. Osgood presiding.

There were present: H. L. Alderman, D.V.S., of East Lexington; A. Marshall, M.R.C.V.S., of Brookline; F. H. Osgood, M.R.C.V.S., of Springfield; J. F. Winchester, D.V.S., of Lawrence; M. Bunker, D.V.S., of Newton; M. O'Connell, D.V.S., of Holyoke; W. H. Hitchings, D.V.S., of Somerville; T. Blackwood, V.S., W. Bryden, V.S., A. Peters, M.R.C.V.S., J. S. Saunders, D.V.S., L. H. Howard, D.V.S., of Boston; also, as invited guests: R. McLean, D.V.S., and W. H. Rose, D.V.S., of the Bureau of Animal Industry.

After the reading of the minutes of the previous meeting and of reports of various committees, the election of officers for the ensuing year was proceeded with, the result being as follows, and the vote in each case unanimous:

President—John S. Saunders, D.V.S., of Boston.

First Vice-President—Joseph M. Skully, V.S., of Boston.

Second Vice-President—Alexander Marshall, M.R.C.V.S., of Brookline.

Secretary and Treasurer—L. H. Howard, D.V.S., of Boston.

Executive Committee—Thomas Blackwood, V.S., of Boston; Austin Peters, M.R.C.V.S., of Boston; H. L. Alderman, D.V.S., of East Lexington; J. F. Winchester, D.V.S., of Lawrence; F. H. Osgood, M.R.C.V.S., of Springfield.

The annual report of the Secretary was then read, it being a summary of the business transacted at the various meetings of the year; of the papers read and discussions thereon, both by members and others; and an enumeration of the pathological specimens exhibited and interesting cases reported. The incorporation of the Association was mentioned as the most important occurrence of the year, and the report showed the roll of membership to have increased and several applications for membership pending.

The report of the Treasurer was then read, and, together with the report of the Secretary, was voted accepted as read.

M. O'Connell, D.V.S., of Holyoke, was elected to membership by a unanimous vote.

Applications for membership were received from Wm. H. Hitchings, D.V.S., of Somerville, and C. P. Lyman, F.R.C.V.S., of Boston, and referred to the Executive Committee.

On motion of Dr. Howard, Dr. A. Liautard, of the American Veterinary College, was elected to honorary membership by a unanimous vote; various remarks in support of the motion and complimentary to Dr. Liautard, being made by Drs. Winchester, Osgood, Blackwood and Saunders.

No other business coming before the meeting, it adjourned to dinner, where the remainder of the evening was passed very pleasantly by the members and their guests, Dr. Bryden officiating as toast master.

L. H. HOWARD, *Secretary*.

CONNECTICUT VETERINARY MEDICAL ASSOCIATION.

Owing to the increasing interest taken in the advancement of veterinary science in Connecticut during the past two or three years, the members of the Connecticut society determined last fall to apply to the January session of the General Assembly of that State for a special charter of incorporation. Accordingly,

they secured the services of ex-Mayor Greene Kendrick, of Waterbury, who, as attorney, drafted a compact and comprehensive charter, and secured its passage, the act having been approved by the Governor March 8th, 1887.

Under this charter the Association becomes a corporate body, possessed of all the powers and assuming all the duties of a corporation. Pursuant to the terms of the act, the first meeting of the Association was held at Waterbury, Conn., in the parlors of the Cooley House, June 7th, 1887. A large representation of the best known and most prominent veterinarians of the State were present, among them being Messrs. E. C. Ross, Thomas Bland, A. D. Sturges, A. A. Tuttle, Nathan Tibbals, and others.

After partaking of a bountiful collation, served in Landlord Cooley's best style, the Association began the work of organization.

E. A. McLellan was elected President; A. D. Sturges, 1st Vice-President; W. K. Lewis, 2d Vice-President; Nathan Tibbals, Treasurer, and Thomas Bland, Secretary. The censors chosen were: Messrs. Bland, Ross, Sullivan, Sturges and Tuttle.

Mr. Kendrick, attorney for the corporation, was also present, and explained the new charter, its purposes, the methods of procedure under it, and its results.

The Association then adopted a constitution and by-laws adapted to the new order of things.

Under a suspension of rules, Drs. Bridges, Lamberton and Hyde were admitted as members of the corporation.

After a general discussion of the veterinary interests of the State, showing a very gratifying progress in veterinary science and skill, the Association adjourned to meet on the first Tuesday in September, 1887, at New Haven. The subjects announced for discussion at that time were "Veterinary Jurisprudence" and "Influenza, its complications, causes and treatment." The Association numbers about twenty members, and the prospects of its speedy growth are very encouraging.

In connection with this subject, it might not be amiss to state that at the time of application for a charter the Association also sought to secure the passage of an act for the regulation of veterinary practice. A full hearing was given to this proposed measure, and, on its merits, the Assembly would doubtless have enacted it into a law. Unfortunately, at the very time of its consideration, another bill, extremely radical and in many respects considered quite objectionable, for the regulation of the general practice of medicine in the State, was presented by the regular practitioners of the allopathic school. In the opposition which this latter bill created and the instrumentalities used to defeat it, the very meritorious bill to regulate the practice of veterinary medicine and surgery was also defeated, owing to a mistaken idea on the part of the Assembly that, to be consistent, they must, in defeating one bill, treat the other to the same dose.

Although Connecticut, therefore, has as yet no well formulated law to protect domesticated animals from quack treatment, public opinion is fast progressing in favor of the passage of such a law, and the Association, aided as it will be by the Connecticut Agricultural Society and the Connecticut Humane Society, has every reason to expect that the next session of the Legislature will place this much-needed law upon the statute book of the State.

THOMAS BLAND, *Secretary.*

OHIO STATE VETERINARY MEDICAL ASSOCIATION.

The regular semi-annual meeting of the Ohio State Veterinary Medical Association was held in the parlors of the Hawley House, Cleveland, O., July 12th, at 10 A.M.

The President, Dr. J. C. Meyer, Jr., called the meeting to order.

On roll call, thirty-five members answered to their names.

The minutes of the previous meeting were read and approved.

The President addressed the Association, stating its objects, etc., and expressed his pleasure at the large attendance present.

The Committee on Veterinary Legislation, composed of Drs. D. P. Yonkerman, Lee, Howe, Meyer and Shaw, made a report, which was accepted.

Letters of regret were read from Prof. Liautard, Principal of the American Veterinary College, and from Drs. Hammil and Pendry, New York.

Prof. Smith, Principal of the Ontario Veterinary College, was present and made an address. He expressed pleasure at meeting our Association, and was well pleased with the harmony which prevailed among the profession in Ohio.

The following gentlemen were then admitted as members of the Association : Drs. W. G. Torrance, R. G. Holland, W. H. Gribble, Wm. McNaughton, W. C. Daniels, Benj. C. McLain, and J. D. Fair. They were introduced, and addressed the Association in a few well-chosen remarks.

Dr. Wight moved an adjournment for dinner.

The Association met at Dr. W. C. Fair's Veterinary Infirmary at 2 P.M., where a number of successful operations were performed. Dr. F. E. Anderson operated on a case of fistulous withers. Dr. J. C. Meyer, Jr., spayed a bitch. Dr. D. P. Yonkerman removed a large melanotic tumor from the abdomen of a dog. Dr. G. W. Butler operated on a ridgling horse.

The Association reconvened in the parlors of the Hawley House at 7 P.M.

Dr. D. P. Yonkerman was called upon, and read a well composed and instructive essay on "Beef inspection as a part of public hygiene."

A lively discussion followed, in which the following gentlemen took part : Drs. Newton, W. C. Fair, Howe, D. P. Yonkerman, Shaw, Torrance, Blanchard, J. Yonkerman, and Derr.

Dr. T. Bent Cotton followed with a paper on "Ridgling Castration," which was generally discussed.

Dr. A. H. Logan exhibited specimens of dental deposits removed from the sup. maxillary sinus of a five-year-old horse. These were 400 in number, and of various shapes and sizes, and were inclosed in and attached to a special membrane.

A number of the members present criticized the working of the People's Mutual Live Stock Insurance Association of Cleveland, O., and censured the action of some of their appointed veterinarians.

A vote of thanks was tendered Prof. Smith for his attendance and the interest he has taken in the advancement of the veterinary profession. Prof. Smith responded with a few remarks.

A vote of thanks was also tendered the proprietors of the Hawley House for courtesies extended, and the Association adjourned, to meet at Akron on the second Tuesday in January next.

A. H. LOGAN, V.S., *Cor. Secretary.*